HELIX AND YAGI-UDA ANTENNA SIM

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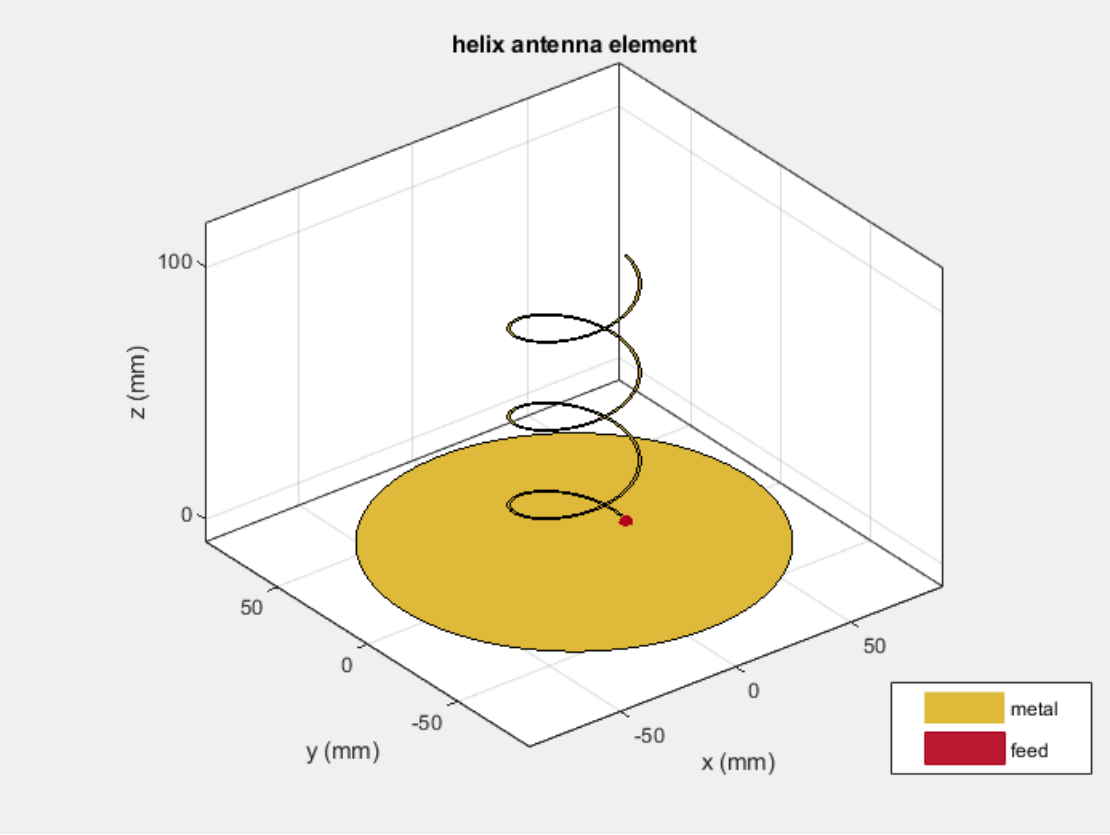
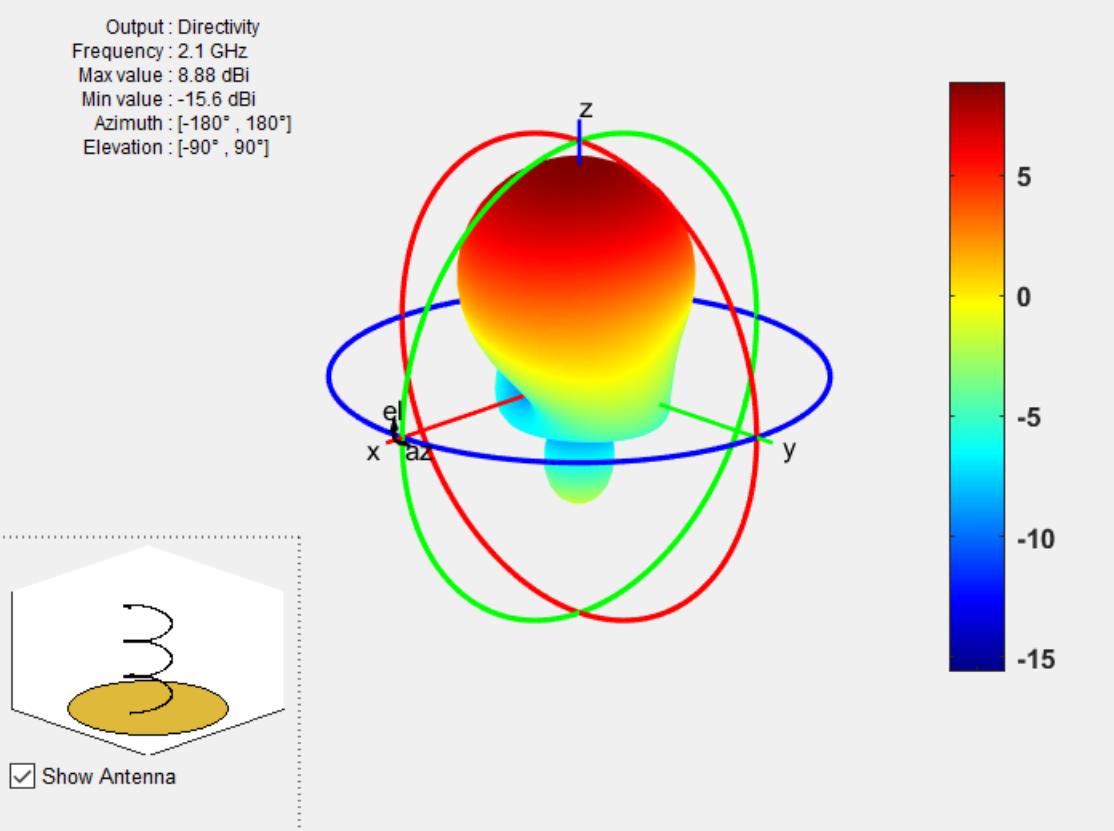
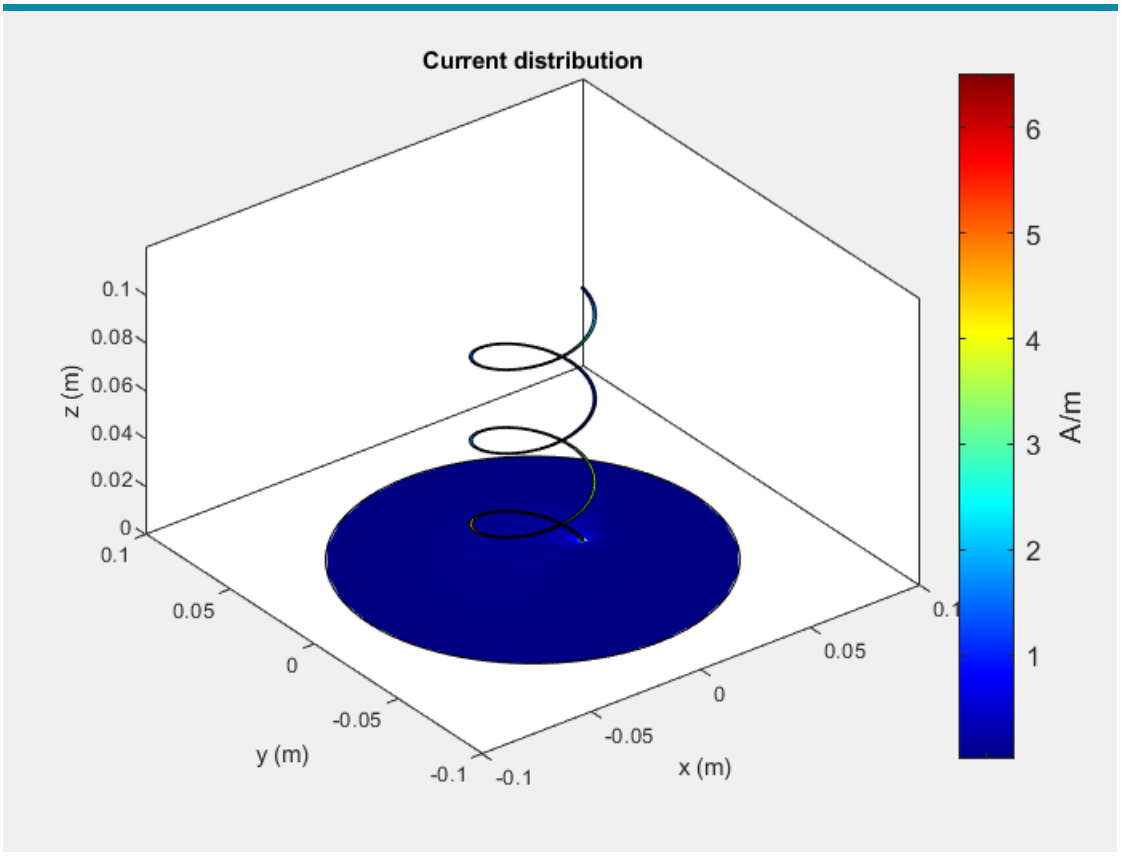
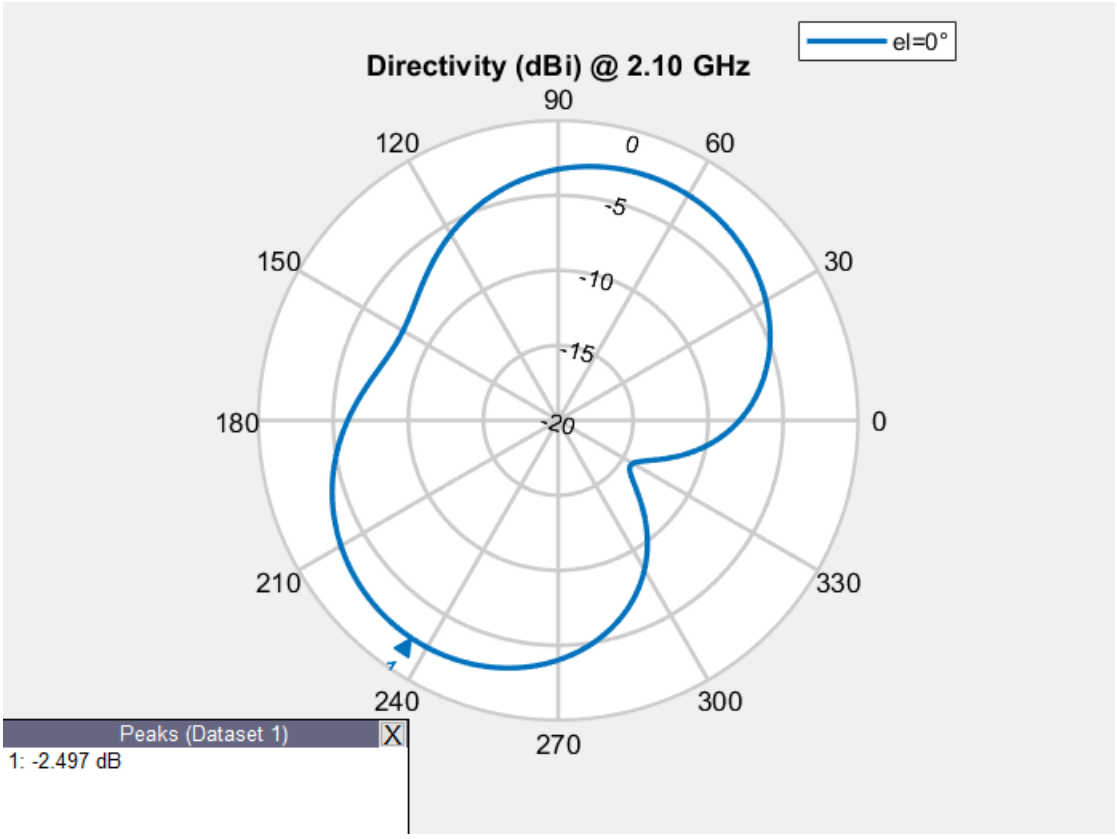
HELIX CODE AND FIGURES :

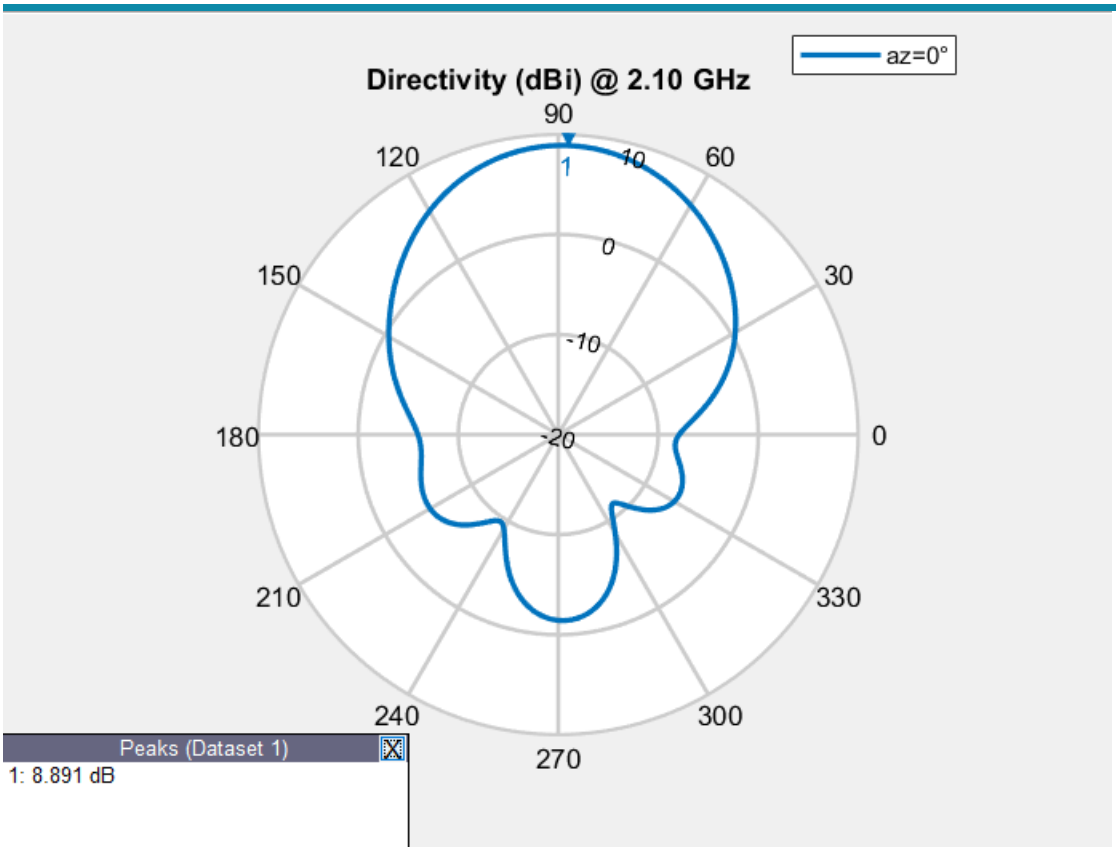
```
% Define plot frequency
plotFrequency = 2100000000;
% Define frequency range
freqRange = (1890:21:2310) * 1e6;
% Define antenna
antennaObject = helix_antennaDesigner;
% show for helix
figure;
show(antennaObject)
% pattern for helix
figure;
pattern(antennaObject, plotFrequency)
% current for helix
figure;
current(antennaObject, plotFrequency)
% azimuth for helix
figure;
patternAzimuth(antennaObject, plotFrequency)
% elevation for helix
figure;
patternElevation(antennaObject, plotFrequency)
```




Output : Directivity
Frequency : 2.1 GHz
Max value : 8.88 dBi
Min value : -15.6 dBi
Azimuth : [-180° , 180°]
Elevation : [-90° , 90°]
z
el
x
az
y
5
0
-5
-10
-15
Show Antenna

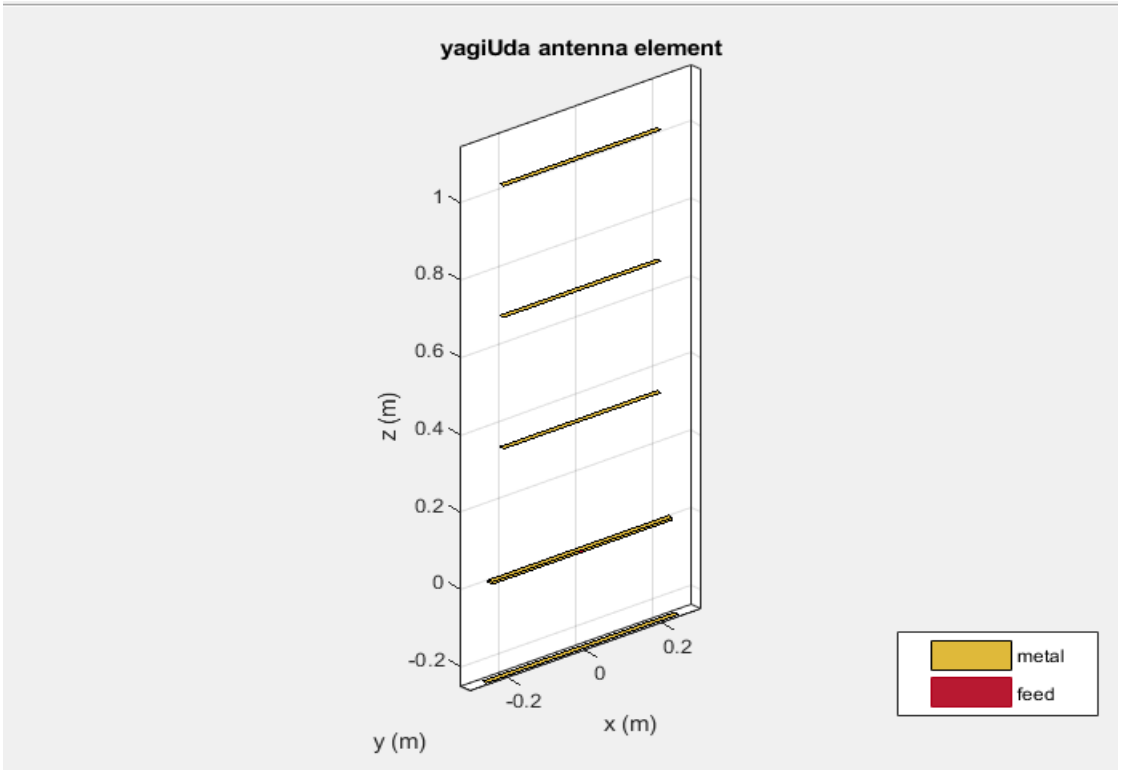

Current distribution
z (m)
0.1
0.08
0.06
0.04
0.02
0
y (m)
0.1
0.05
0
-0.05
-0.1
x (m)
0.1
0.05
0
-0.05
-0.1
A/m
6
5
4
3
2
1

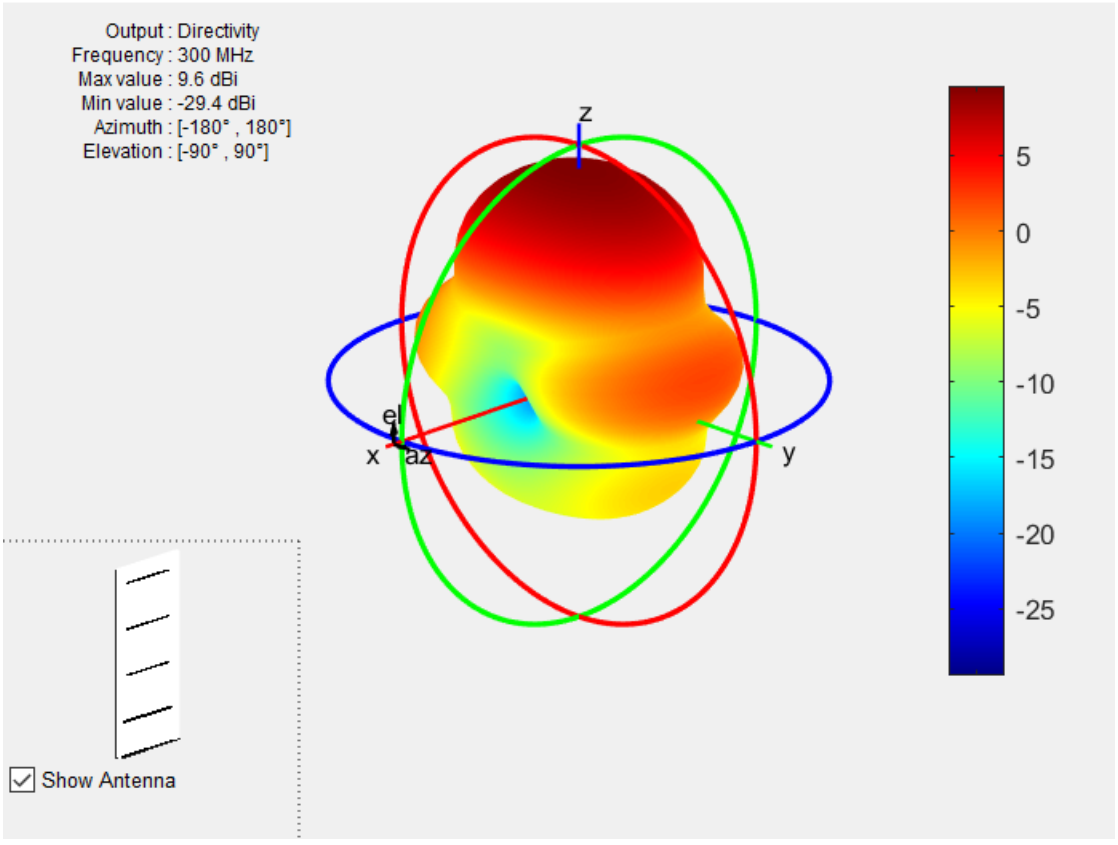

el=0°
Directivity (dBi) @ 2.10 GHz
90
120
60
150
30
180
0
210
330
240
300
270
0
-5
-10
-15
-20
1
Peaks (Dataset 1)
1: -2.497 dB

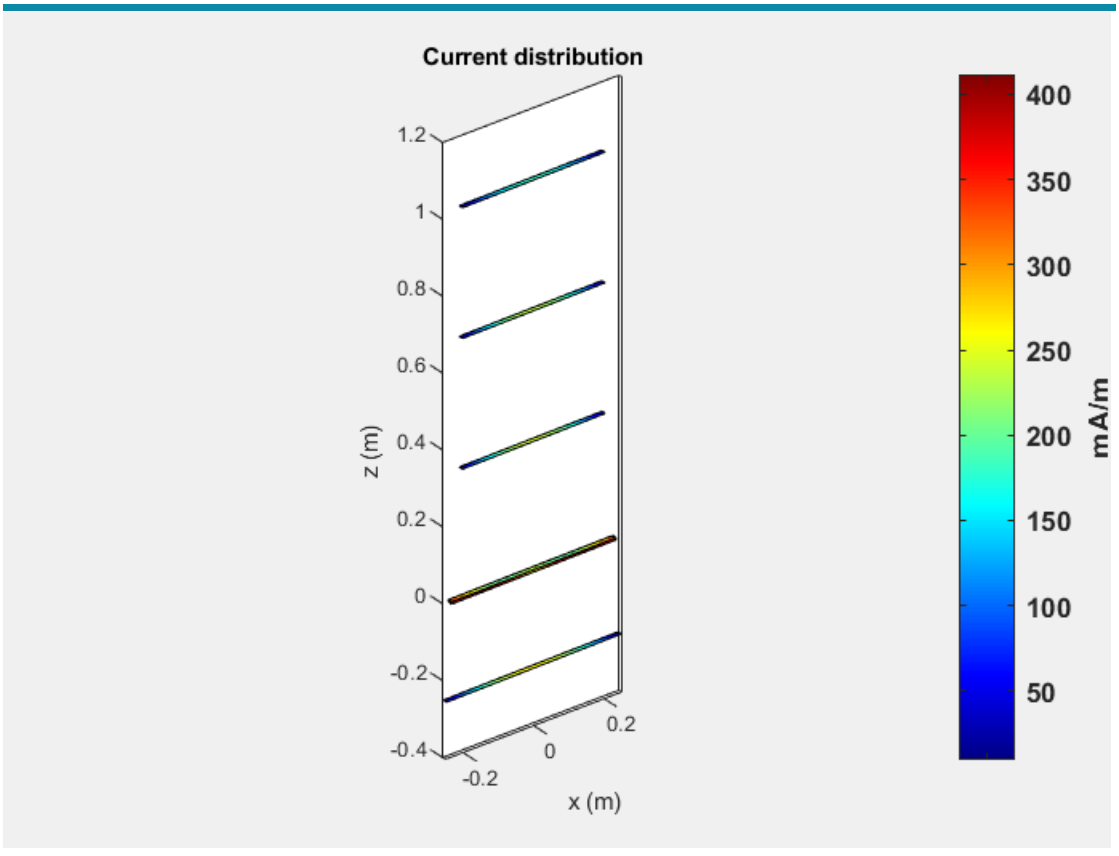

az=0°
Directivity (dBi) @ 2.10 GHz
90
120
60
150
30
180
0
210
330
240
300
270
1
10
0
-10
-20
Peaks (Dataset 1)
1: 8.891 dB

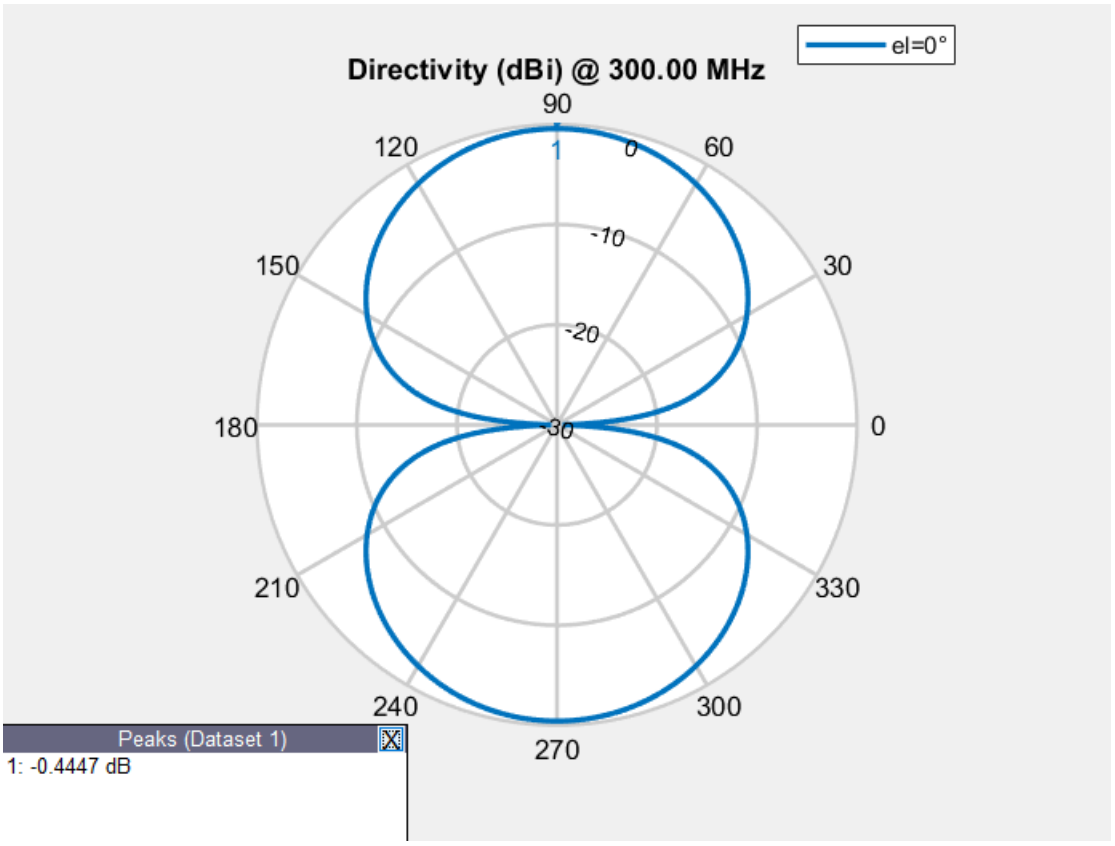
YAGI-UDA CODE AND FIGURES :

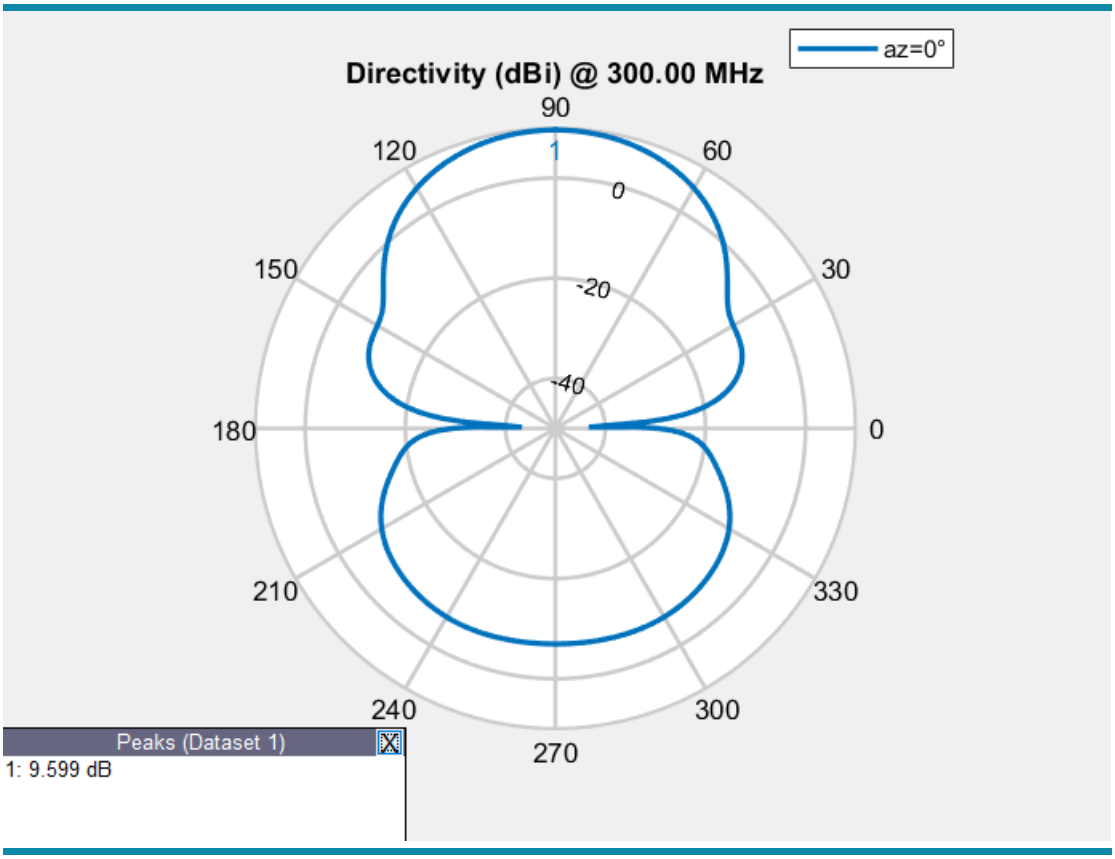
```
% Define plot frequency
plotFrequency = 300000000;
% Define frequency range
freqRange = (270:3:330) * 1e6;
% Define antenna
antennaObject = yagiUda_antennaDesigner;
% show for yagiUda
figure;
show(antennaObject)
% pattern for yagiUda
figure;
pattern(antennaObject, plotFrequency)
% current for yagiUda
figure;
current(antennaObject, plotFrequency)
% azimuth for yagiUda
figure;
patternAzimuth(antennaObject, plotFrequency)
% elevation for yagiUda
figure;
patternElevation(antennaObject, plotFrequency)
```




Output : Directivity
Frequency : 300 MHz
Max value : 9.6 dBi
Min value : -29.4 dBi
Azimuth : [-180° , 180°]
Elevation : [-90° , 90°]
z
el
x
az
y
5
0
-5
-10
-15
-20
-25
Show Antenna


Current distribution
1.2
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
z (m)
-0.2
0
0.2
x (m)
400
350
300
250
200
150
100
50
mA/m


Directivity (dBi) @ 300.00 MHz
el=0°
90
120
60
150
30
180
0
210
330
240
300
270
1
0
-10
-20
-30
Peaks (Dataset 1)
1: -0.4447 dB


Directivity (dBi) @ 300.00 MHz
az=0°
90
120
60
150
30
180
0
210
330
240
300
270
1
0
-20
-40
Peaks (Dataset 1)
1: 9.599 dB